



Launch Mission Execution Forecast

Mission: Falcon 9 CRS-27

Issued: 14 March 2023 / 0830L (1230Z)

Valid: 14 March 2023 / 2025 - 2036L (15/0025 - 0036Z)



Forecast Discussion: Yesterday's cold front is well south of the area this morning, leading to a cool and dry start to the day. A strong jet stream to the north and approaching mid-level disturbance dropping into the western Gulf of Mexico will both enhance the mid and upper-level cloud cover streaming in from the west. These clouds will be the main launch weather this evening, with the potential for Thick Cloud Layer Rule violations if the cloud bases drop below 18,000 feet.

The disturbance will move east of the area on Wednesday, clearing the skies as the surface high center moves into the eastern US. As a result, no significant weather is expected for the backup window Wednesday evening.

The next cold front will be moving across the Gulf of Mexico by Friday evening, with the increasing pressure gradient ahead of this system, bringing strong and gusty south-southeasterly winds for the 72-hour delay. Any precipitation is expected to reach the area well after the Friday evening launch window; however, the strong winds will pose a Liftoff Wind concern.

Launch Day		Probability of Violating Weather Constraints ¹				
20%		Primary Concerns: Thick Cloud Layer Rule				
		Weather Conditions			Additional Risk Criteria ²	
Weather/Visibility: None / 7 mi.		Clouds			Upper-Level Wind Shear: Moderate	
		Type	Coverage	Base (ft)	Tops (ft)	
Temp/Humidity: 62°F / 55%		Cumulus	Few	2,500	4,000	Booster Recovery Weather: Low
Liftoff Winds (200'): 010° 12 - 17 mph		Cirrocumulus	Broken	22,000	27,000	Solar Activity: Low
24-Hour Delay		Probability of Violating Weather Constraints				
5%		Primary Concerns: Cumulus Cloud Rule				
		Weather Conditions			Additional Risk Criteria	
Weather/Visibility: None / 7 mi.		Clouds			Upper-Level Wind Shear: Low	
		Type	Coverage	Base (ft)	Tops (ft)	
Temp/Humidity: 60°F / 59%		Cumulus	Scattered	3,500	6,000	Booster Recovery Weather: Low
Liftoff Winds (200'): 020° 10 - 15 mph						Solar Activity: Low
72-Hour Delay		Probability of Violating Weather Constraints				
10%		Primary Concerns: Liftoff Winds				
		Weather Conditions			Additional Risk Criteria	
Weather/Visibility: None / 7 mi.		Clouds			Upper-Level Wind Shear: Low	
		Type	Coverage	Base (ft)	Tops (ft)	
Temp/Humidity: 72°F / 65%		Cumulus	Scattered	3,500	7,000	Booster Recovery Weather: Low
Liftoff Winds (200'): 160° 17 - 22 mph		Cirrus	Scattered	30,000	35,000	Solar Activity: Low
Notes	1. The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring any random time during the launch window.					
	2. Additional Risk Criteria, which are not included in the PoV, are mission-specific constraints that may not include all phenomena within each risk factor.					
See https://www.patrick.spaceforce.mil/Portals/14/Weather/LaunchFAQ.pdf for more information						
Next Forecast Will Be Issued		As Needed				